comprises at least one substrate selected from the group consisting of silica bead substrates, latex bead substrates and other bead substrates appropriate for flow cytometry, and wherein the receptor in conjunction with a support is analyzed with a flow cytometer in real-time.

E1 Cont

2. The method of claim 1 wherein the step of incorporating an attachment tether to a receptor comprises incorporating at least one of the following tags from the group consisting of C-Histidine, N-Histidine, biotin, and GST tags.

3. The method of claim 1 wherein the step of incorporating an attachment tether to a receptor comprises incorporating a tag into an oligonucleotide.

4. The method of claim 1 wherein the step of incorporating an attachment tether to a receptor comprises incorporating a tag into a GPCR construct prior to amplification.

5. The method of claim 1 wherein the step of solubilizing the receptor comprises solubilizing by lysing cell membranes containing the receptor.

6. The method of claim 1 wherein the step of presenting the receptor in conjunction with a support comprises presenting by affinity coupling the receptor to a particulate substrate.

7 ~~8~~. The method of claim 1 wherein the step of presenting the receptors in conjunction with a support comprises presenting on a support comprising a Ni^{2+} silica bead.

8 ~~9~~. The method of claim 1 wherein the step of presenting the receptors in conjunction with a support comprises presenting a fluorescently labeled receptor.

9 ~~10~~. The method of claim 1 further comprising the step of (d) presenting at least one ligand to bind to the receptor, wherein said ligand is known to bind to the receptor.

10 ~~11~~. The method of claim ~~10~~ 9 wherein the step of presenting at least one ligand to bind to the receptor comprises presenting at least one fluorescently labeled ligand.

11 ~~12~~. The method of claim ~~10~~ 9 wherein the step of presenting at least one ligand to bind the receptor comprises presenting a library of ligands.

12 ~~13~~. The method of claim ~~10~~ 9 wherein the step of presenting at least one ligand to bind the receptor comprises presenting at least one ligand on a support.

14 ~~15~~. The method of claim ~~10~~ 9 further comprising the step of (e) combining the receptor and ligand to accomplish binding.

15 ~~16~~. The method of claim ~~15~~ 14 further comprising the step of (f) sorting the bound receptor ligand pairs by fluorescence.

16 ~~17~~. The method of claim ~~16~~ 15 wherein the step of sorting the bound receptor ligand pairs by fluorescence comprises sorting the bound receptor ligand pairs by flow cytometry.

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18 ~~48~~. (Amended) A method for non-cellular display of 7-transmembrane receptors comprising the following steps:

E2

a) incorporating an attachment means to a receptor;

b) solubilizing the receptor;

c) presenting the receptor in conjunction with a support;

d) presenting at least one ligand to bind to the receptor, wherein said ligand is known to bind to the receptor;

e) combining the receptor and ligand to accomplish binding while the receptor is bound to the support; and

E2 Cont

f) sorting the bound receptor ligand pairs by fluorescence and using flow cytometry to analyze the fluorescence and binding interactions in real-time.

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19 ~~51.~~ The method of claim ~~48~~ 18, wherein said step of sorting the bound receptor pairs by fluorescence is carried out while the receptor is bound to the support.

20 ~~53.~~ The method of claim ~~48~~ 18, wherein said support comprises at least one substrate selected from the group consisting of silica bead substrates, latex bead substrates and other bead substrates appropriate for flow cytometry.

21 ~~54.~~ The method of claim 1 wherein the step of incorporating an attachment tether to a receptor comprises incorporating at least one epitope tag.

22 ~~55.~~ The method of claim 54 wherein said at least one epitope tag is an N-terminal tag.

23 ~~56.~~ The method of claim 54 wherein said at least one epitope tag is a C-terminal tag.

24 ~~57.~~ The method of claim 54 wherein said at least one epitope tag is an internal tag.

7. The method of claim 1 wherein the step of presenting the receptors in conjunction with a support comprises presenting on a support comprising at least one substrate selected from the group consisting of silica bead substrates, latex bead substrates and other bead substrates appropriate for flow cytometry.

8. The method of claim 7 wherein the step of presenting the receptors in conjunction with a support comprises presenting on a support comprising a Ni^{2+} silica bead.

9. The method of claim 1 wherein the step of presenting the receptors in conjunction with a support comprises presenting a fluorescently labeled receptor.

10. The method of claim 1 further comprising the step of (d) presenting at least one ligand to bind to the receptor.

11. The method of claim 10 wherein the step of presenting at least one ligand to bind to the receptor comprises presenting at least one fluorescently labeled ligand.

12. The method of claim 10 wherein the step of presenting at least one ligand to bind the receptor comprises presenting a library of ligands.

13. The method of claim 10 wherein the step of presenting at least one ligand to bind the receptor comprises presenting at least one ligand on a support.

13 ~~14~~ 9. The method of claim 10 wherein the step of presenting at least one ligand to bind to the receptor comprises presenting at least one ligand associated with a magnetically labeled support.

15. The method of claim 10 further comprising the step of (e) combining the receptor and ligand to accomplish binding.

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16. The method of claim 15 further comprising the step of (f) sorting the bound receptor ligand pairs by fluorescence.

17. The method of claim 16 wherein the step of sorting the bound receptor ligand pairs by fluorescence comprises sorting the bound receptor ligand pairs by flow cytometry.

18. The method of claim 17 wherein the step of sorting the bound receptor-ligand pairs by flow cytometry comprises sorting the bound receptor-ligand pairs by size.

19. The method of claim 16 further comprising the step of (g) sorting the bound receptor-ligand pairs by magnetic field.

20. The method of claim 10 further comprising the step of (h) presenting a molecule to block the binding of the receptor with the ligand.

21. The method of claim 20 wherein the step of presenting a molecule to block the binding of the receptor with the ligand comprises presenting at least one molecule selected from the group consisting of soluble and bead-bound molecules.

22. The method of claim 20 wherein the step of presenting a soluble molecule to block the binding of the receptor with the ligand comprises presenting at least one drug to block the binding of the receptor with the ligand.

17 28. The method of claim 1 wherein the step of presenting the receptors in conjunction with a support comprises presenting the receptors in conjunction with a micelle.

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